Remarks

Claims 1-16 are canceled. Claims 17-37 are submitted. Claims 17, 18 and 21-37 are readable on the elected species.

Antecedent basis for amending Claim 17 appears in the original specification as published on the PTO website as U.S. Published Application No. 2004/0084127 A1 paragraph [0035]. Accordingly, Claim 17 is amended to recite, "promoting penetration through the thin, porous nonwoven web by the portion of the layer of hydraulic cementitious material to form the cement skin adjacent to the outer face."

Each of the Examiner's objections or rejections is addressed below.

Rejection Pursuant to 35 U.S.C. § 103(a) Over Newman et al. (US 6,054,205) in view of Mathieu (US 6,187,409) Galer (US 4,450,022) Canada (CA 2006149) and Berke et al. (US 5,753,368).

A factual basis for the Final Rejection will be refuted by discussing the following items:

(1.) Galer is the sole reference that teaches a method of promoting a layer of concrete mix to penetrate and form a cement skin. Galer teaches a method of using a riser 25 (riser 25 of a step 24) to promote a layer of concrete mix to penetrate a disclosed "network" (mesh, scrim or fabric), and form on the bottom side of the network. However, Galer's riser 25 does not address the need or problem, "promoting penetration through the thin, porous nonwoven web by a portion of the layer of hydraulic cementitious material to form the cement skin adjacent to the outer face by having the thin, porous nonwoven web comprise alkali resistant polymer fibers coated with a hydrophilic material, " as recited in Applicant's claims.

(2.) Newman et al. is the sole reference that discloses a facing sheet 72 and another facing sheet 10, each comprising a combination of a scrim 15 and a melt blown polymer web 20. Facing sheet 72 is shown in Fig. 6 as not having a cement skin. Newman et al.'s written description describes the subject matter in Fig. 6 in such a manner, that a slurry 91 (or slurry 76 or slurry 93) does not penetrate through the facing sheet 10 to form a cement skin on the top surface of the

facing sheet 10. Gravity causes two slurries 76 and 93 to fall away from facing sheet 10, and thus, the slurries 76 and 93 do not penetrate upward to form a cement skin. A third slurry 91 is added on a top surface of the facing sheet 10, instead of penetrating through the facing sheet 10 from below and forming on the top surface.

(3.) Canada teaches a fabric, individually, which is only partially penetrated by cementitious material, and is not penetrated through by cementitious material to form a cement skin.

(4.) Each of Galer, Mathieu and Canada teaches a mesh, scrim or fabric, individually, and not in combination with a melt blown polymer web. They do not teach Newman et al.'s combination of a scrim 15 and a melt blown polymer web 20. In Newman et al., slurry 91 forms a cement skin by being added onto a top surface of a melt blown polymer web 20. The slurry 91 (or slurries 76 and 93 below the web 20) do not penetrate through the melt blown polymer web 20 to form the cement skin on the top surface. Thus, Newman et al. teaches a combination of a scrim 15 and a melt blown web 20, and does not teach penetration of cementitious material through the melt blown web 20 to form a cement skin. In Galer, Mathieu and Canada, a mesh, scrim or fabric, individually, although similar to the scrim 15, does not further include the melt blown polymer web 20, and thereby can not teach penetration of cementitious material through the melt blown polymer web 20 of Newman et al. to form a cement skin.

(5.) Berke et al. does not disclose a mesh, scrim, fabric or a thin, porous nonwoven web. Berke et al. teaches a mixture of cement and individual fibers treated with a wetting agent to disperse the individual fibers in the mixture. Canada teaches a fabric treated with a polymer (wetting agent), and yet cementitious material penetrates only partially through the fabric, and does not penetrate through the fabric to form a cement skin, despite the fabric being treated with the wetting agent.

Galer is the sole reference that teaches a method of promoting a layer of concrete mix to penetrate and form a cement skin.

Galer teaches a method to promote slurry penetration, but Applicant's method differs from Galer's method. Galer teaches, "The thickness of the layer of concrete mix formed on the bottom side of the network is determined by the speed of the conveyor belt 15, the consistency of the concrete mix, and the height of the riser 25" (column 5, lines 18-21). Thus, Galer teaches a further method of using a riser 25 (riser 25 of a step 24) to promote the layer of concrete mix to form on the bottom side of the network.

Galer teaches, at column 3, lines 3-16, "The reinforcing fibers may be in the form of a network such as a wonwoven mesh or scrim, or a non-woven pervious fabric. ... When a woven mesh or scrim is employed, the mesh size is selected according to the strength desired and the size of the aggregate particles in the slurry. ... Non woven membranes must be sufficiently porous to permit penetration by the slurry." Thus, Galer teaches a mesh individually a scrim individually or a fabric individually, having sufficiently large pores, and does not teach Newman et al.'s combination of a scrim 15 with a thin, porous nonwoven web 20. In Newman et al., Fig. 6 shows that facing sheet 78 does not have a cement skin. In Newman et al., slurry 91 forms a cement skin by being added onto a top surface of a melt blown polymer web 20. Newman et al. teaches that slurries 76 and 93 do not penetrate through a combination of a scrim 15 and a meltblown polymer web 20 of facing sheet 10, and thereby can not form a cementitious skin. Newman et al. teaches that slurry 91 does not penetrate through the melt blown polymer web 20 of facing sheet 10 to form a cement skin on the top surface. (See discussion of Newman et al. below.) Galer can not be combined with Newman et al. to cause slurries 76 and 93 to penetrate through a combination of a scrim 15 and a meltblown polymer web 20. The Advisory Action states, "It is further emphasized that Galer suggests completely embedding woven mesh or nonwoven fabric in cementitious slurry so that a smooth surface of the cementitious board can be obtained." However, Applicant's claims recite more than that. Applicant's claim 17 recites a method different from the method of using of a riser 25 of Galer. Applicant's claim 17 recites,

"promoting penetration through the thin, porous nonwoven web by a portion of the layer of hydraulic cementitious material to form the cement skin adjacent to the outer face by having the thin, porous nonwoven web comprise alkali resistant polymer fibers coated with a hydrophilic material." Accordingly, the method of claim 17 patentably distinguishes over the use of Galer's riser 25 combined with Newman et al. and the other cited references, and patentably distinguishes over sufficiently large pores for penetration. The Advisory Action mailed 07/17/2007 cites KSR International Co. v. Teleflex Inc. et al. for the principle that any need or problem known in the field of endeavor at the time of the invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. However, Galer's riser 25 does not address a need or problem, "promoting penetration through the thin, porous nonwoven web by a portion of the layer of hydraulic cementitious material to form the cement skin adjacent to the outer face by having the thin, porous nonwoven web comprise alkali resistant polymer fibers coated with a hydrophilic material, " as recited in Applicant's claims.

Newman et al. is the sole reference that discloses a facing sheet 72 and another facing sheet 10, each comprising a combination of a scrim 15 and a melt blown polymer web 20. Facing sheet 72 is shown in Fig. 6 as not having a cement skin formed by either of slurries 76 or 93. Newman et al.'s written description describes the subject matter in Fig. 6 in such a manner, that a slurry 91 (or slurry 76 or slurry 93) does not penetrate through the facing sheet 10 to form a cement skin on the top surface of the facing sheet 10. The force of gravity causes two slurries 76 and 93 to fall away from facing sheet 10, and thus, the slurries 76 and 93 do not penetrate upward to form a cement skin. See Newman, column 9 lines 46-49. A third slurry 91 is added on a top surface of the facing sheet 10, instead of penetrating through the facing sheet 10 from below and forming on the top surface. See Fig. 6, and column 9, lines 30-31. The Final Rejection at page 2 paragraph (2) line 15, states, "Newman et al. discloses making a SMOOTH cement board by depositing a first low viscosity slurry 76 formed of a composition comprising cement on the facing sheet 72 (e.g. facing sheet 10 comprising an open mesh scrim and meltblown web).

(Underline in original text) The underlined text appears to emphasize that facing sheet 72 (e.g. - for example or by way of example facing sheet 10) are subject to the same method. However, facing sheet 72 and facing sheet 10 have different reference numerals (72 and 10) and are shown in Fig. 6 as being different layers separated by slurries 76 and 93. Fig. 6 shows a bottom facing sheet 72 without a cement skin, and the written description does not describe the bottom facing sheet 72 as having a cement skin. Fug. 6 shows top facing sheet 10 as having a slurry 91, but bottom facing sheet 72 does not have a slurry 91 or equivalent. Applicant's method differs from facing sheet 72 and facing sheet 10 by reciting a method of promoting penetration of a layer of hydraulic cementitious material through an open mesh and a nonwoven web to form a <u>cement skin</u> adjacent to the outer face. For purposes of discussion, if slurry 91 on facing sheet 10 is considered a cement skin, such a cement skin is formed from above by deposition of facing sheet 10, which is different compared to Applicant's method.

The Advisory Action states, "... Newman et al's polypropylene fiber meltblown web (nonwoven fabric) is imbedded in the cementitious slurry during manufacture of the cement board." In response, the Advisory Action does not indicate to what extent the fabric is embedded. The Final Rejection at page 3, last paragraph, states, "Newman et al. is considered to teach a method of making a smooth cementitious board having a cement skin adjacent to an outer face." In response, the Final Rejection does not establish prima facie evidence to indicate whether and how Newman et al. promotes the formation of a cementitious skin, according to Applicant's claims. The Advisory Action states, "A smooth surface is highly desired by Newman et al. See last two lines of abstract and col. 9 lines 32-35." Further, the Advisory Action states, "Note Newman et al.'s disclosure that slurries 91 and 93 are optional and Newman et al.'s teaching that the cementitious slurry creates a smooth surface (skin) on the cement board (col. 9, lines 32-35)...". It is noted that Newman et al.'s alleged teaching of a "smooth surface (skin)" is ambiguously referred to by the Advisory Action, and will require further discussion, which follows. The entirety of Newman et al. must be considered, as discussed below, to determine the

differences between Applicant's claimed method and the disclosure of Newman et al., and whether such differences are supplied by other prior art.

It is noted that col. 9, lines 32-35 (referred to in the Advisory Action) are continued from lines 30-31, such that Newman et al. teaches, at lines 30-35, "An additional mixer **90** can be used to apply a low viscosity cementitious slurry **91** to facing sheet **10**. The low viscosity slurry **91** will generally pass through the glass fiber facing sheet **10** ...". The Final Rejection at page 3, line 1 indicates a method of "*optionally* depositing a low viscosity slurry 91 on a facing sheet 10 comprising the open mesh scrim and meltblown web." (Italicized original text). The Final Rejection and the Advisory Action do not expressly state which slurry forms a cementitious skin. Thus, how the skin is formed is ambiguous. The statement that an additional mixer 90 can be used to apply slurry 91 does not express that the slurry 91 is optional, only that an additional mixer can be used. The Final Rejection and the Advisory Action does not state that the slurry 91 forms a cementitious skin, but nevertheless, slurry **91** is present, and must be considered as to whether slurry 91 forms the a smooth surface (skin) on a cement board as referred to in the Final Rejection and the Advisory Action. Further, Fig. 6 of Newman et al. discloses that the slurry 91 is supplied on top of the facing sheet 10, while the slurries 76 and 93 are under the facing sheet 10, as shown in Fig. 6. When the Final Rejection at page 3, last paragraph, states, "Newman et al. is considered to teach a method of making a smooth cementitious board having a cement skin adjacent to an outer face," the Final Rejection might be referring to the slurry 91 on top of the facing sheet 10, and not to the slurries 76 and 93 under the facing sheet 10. Applicant's claimed method does not rely on a slurry on top as does Newman et al.'s slurry 91.

Moreover, Newman et al. describes slurries 76 and 93 in such a manner that they can not be interpreted so as to penetrate through the facing sheet 10 and form a cement skin. A discussion follows. Reference is made to Newman et al. that discloses, at col 9, lines 32-35, "The low viscosity slurry **91** will generally pass through the glass fiber facing sheet **10** ...". Accordingly, in Newman et al., for the slurry 91 to pass through the glass fiber facing sheet 10, the facing sheet 10 must be free to pass the slurry 91 from the top, and therefore the facing sheet

10 must be free of the slurries 76 and 93 that are located below the facing sheet 10 as shown in Fig. 6. The slurries 76 and 93 below the facing sheet 10 can not have penetrated through the facing sheet 10 to form a cement skin, which skin would interfere with the disclosure of Newman et al. namely, "the low viscosity slurry 91 will generally pass through the glass fiber facing sheet 10." Thereby, the slurries 76 and 93 below the facing sheet 10 do not penetrate through the facing sheet 10 and form a cement skin when the slurry 91 is applied. Otherwise, such a skin would be in the way, so as to circumvent Newman et al.'s express disclosure that the slurry **91** will generally pass through the glass fiber facing sheet **10.** Newman et al. provides a slurry 91 on top of a facing sheet 10, which does not promote the formation of a cementitious skin in a manner according to Applicant's claims.

The Final Rejection at page 3, line 11 states, "The meltblown web (nonwoven web) of the facing sheet maintains a portion of the cementitious slurry 76 on the surface of the glass fiber facing sheet 10 and causes the slurry to window pane the mesh openings 40 of the glass scrim 15 thereby mechanically integrating the facing sheet in to the cement board and forming a substantially planar bridge surface between the transverse and longitudinal yarns." Further, the Advisory Action states, "Newman et al. ...teaches that the meltblown web of the facing sheet <u>maintains a portion of the cementitious slurry 76 on the surface of the glass fiber facing sheet 10</u> and causes the slurry to window pane the mesh openings 40 of the glass scrim 15 thereby mechanically integrating the facing sheet into the cement board and forming a substantially planar bridge surface between the transverse and longitudinal yarns." Underline added. The Final Rejection and Advisory Action do not state that the slurries 76 and 93 form a cement skin in the absence of the slurry 91, and therefore do not reveal whether Newman et al. discloses a cement skin formed by the slurries 76 and 93. The underlined text indicates an ambiguity relied upon in the Advisory Action, as to whether the meltblown web of the facing sheet maintains a portion of the cementitious slurry 76 on a top surface of the facing sheet 10. If not on a top surface, then a cement skin can not form on the top surface. The entirety of Newman et al.'s disclosure must be

considered to resolve the ambiguity. Accordingly, Newman et al. refers to "window pane" as being a phenomenon, which is described at column 9, lines 43-57;

"When the glass fiber facing sheet 10 is pressed into the cementitious slurry 76 or slurries [76 and 93], the cementitious slurry is forced up through the mesh openings 40 of the glass fiber facing sheet 10. The force of gravity then causes the cementitious slurry 76 to sink back down away from the glass fiber facing sheet 10 and form meniscuses within the mesh openings." See Column 9, lines 43-49.

At this juncture in Newman et al.'s description, and considering column 9 lines 43-49, the slurry 76 is disclosed as being forced up through the mesh openings 40. The slurry 76 is not disclosed as being forced through the meltblown polymer web 20 that is over the mesh openings 40. Thus, the slurry 76 is limited by Newman et al.'s express disclosure that, while slurry is forced through the mesh openings 40, there is no disclosure present that the slurry 76 is at a top surface of the web 20. That being so, the slurry 76 can not form a cement skin on the top of the facing sheet 10. Moreover, Newman discloses, "the force of gravity then causes the cementitious slurry 76 to sink back down away from the glass fiber facing sheet 10." Accordingly, a cement skin, if formed by the slurry 76 on the top of the facing sheet 10, would be held up by the facing sheet 10 and would be prevented from sinking back down away from the facing sheet 10, as disclosed by Newman et al. Thus, column 9, lines 43-49 of Newman et al. prevents an interpretation that the slurries 76 and 93 form what the Advisory Action refers to as a smooth surface (skin) on the surface of the facing sheet 10.

Newman et al continues to disclose, at column 9, lines 43-57, "Nevertheless, the melt blown fiber web 20 prevents the cementitious slurry 76 from sinking into the large mesh openings 40 of the glass fiber facing sheet 10. <u>Instead, the melt blown fiber web 20 maintains a portion of the cementitious slurry 76 on the surface of the glass fiber facing sheet 10 and causes the slurry to window pane the mesh openings 40 of the glass scrim 15</u> thereby forming a substantially planar bridge surface between the transverse and longitudinal yarns 25 and 30. As a result, the glass fiber facing sheet 10 becomes mechanically integrated into the cement board 12

once the cementitious slurry 76 or slurries harden to thereby provide a generally uniform planar exterior surface on the cement board 12." (Underline added to text) The underlined text in Newman et al. when considered individually, and in disregard of other parts of Newman et al.'s disclosure, is ambiguous in determining whether a portion of the cementitious slurry 76 on the surface of the glass fiber facing sheet 10 refers to the bottom surface of the sheet 10 or the top surface. The Final Rejection, at page 3 line 18 states, "In view of the above disclosure, Newman et al. is considered to teach a method of making a smooth cement board having a cement skin adjacent an outer face." The Final Rejection but disregards other portions of the disclosure that would support Applicant's remarks. Other parts of Newman et al.'s disclosure, as discussed above, namely column 9, lines 43-49, establish that the slurry 76 is not on the top surface in the absence of slurry 91, and namely column 9, lines 32-34 establish that the facing sheet 10 must be free of the slurries 76 and 93 under the facing sheet 10 in order for the low viscosity slurry 91 to generally pass through the facing sheet 10 from the top. From the foregoing discussion, the Final Rejection and the Advisory Action has not established that Newman et al. discloses a smooth surface (skin) on a cement board as referred to in the Final Rejection and the Advisory Action.

The Advisory Action states, "Newman et al. directed to making SMOOTH reinforced cementitious boards, discloses ... **an open mesh glass scrim and a polymer web** ...". (Original text emphasis) However, Newman et al. discloses, at column 10, lines 19-21, "As will be apparent from the foregoing, the glass fiber facing sheet 10 of the present invention provides a smooth cement board 12 which is essentially free of pitting." Underline emphasis added. Thus, Newman et al. discloses that the facing sheet 10 makes the SMOOTH reinforced cementitious boards referred to by the Advisory Action, and not a cement skin.

Newman et al. is silent for teaching, suggesting, motivating or explaining a method of penetrating a cementitious material through a mesh 15, and promoting penetration of a portion of the cementitious material through a web 20, except that only the porous web has openings 40 in the porous web (column 6, lines 10-13 and column 9, line 45). The web has to have openings 40, but no disclosure is present to promote penetration of a web 20 by slurries 76 and 93 and form a

cementitious skin. Moreover, as discussed herein, Applicant's claims differ from the slurry 91 applied from the top of the web 20, and the slurry on top of the web 20 has not penetrated through the web. The portion of the slurry 91 on top that penetrates down into the web 20 does not form a cement skin.

Page 3 of the Advisory Action appears to combine Berke et al. with Newman et al. by stating, "Furthermore, one of ordinary skill ...is appraised by Berke et al. of .. the requirement to provide such hydrophobic polypropylene fibers with a desired surface tension characteristic. The wettability is relevant to Newman et al.'s cement board making process since Newman et al.'s polypropylene fiber meltblown web (nonwoven fabric) is embedded in the cementitious slurry during manufacture of the cement board." However, combining a wetting agent of Berke et al with the meltblown web 20 of Newman et al., does not overcome the facts that Newman et al.'s disclosure, as discussed above, namely column 9, lines 43-49, establish that the slurry 76 is not on the top surface, and namely column 9, lines 32-34 establish that the facing sheet 10 must be free of the slurries 76 and 93 under the facing sheet 10, in Fig. 6, in order to pass the low viscosity slurry 91 generally through the facing sheet 10 from the top. A person of ordinary skill would not consider Berke et al.'s disclosure to change such facts.

<u>Each of Galer, Mathieu and Canada teaches a mesh, scrim or fabric, individually, and not in combination with a melt blown polymer web</u>. They do not teach Newman et al.'s <u>combination of a scrim 15 and a melt blown polymer web 20</u>. In Newman et al., slurry 91 forms a cement skin by being added onto a top surface of a facing sheet 10 having a melt blown polymer web 20. The slurry 91 (or slurries 76 and 93 below the web 20) do not penetrate through the melt blown polymer web 20 to form the cement skin on the top surface. Thus, Newman et al. teaches a facing sheet 10 combining a scrim 15 and a melt blown web 20, and does not teach penetration of cementitious material through the melt blown web 20 to form a cement skin. In Galer, Mathieu and Canada, a mesh, scrim or fabric, individually, although similar to the scrim 15, does not further include the melt blown polymer web 20, and thereby can not teach penetration of

cementitious material through the melt blown polymer web 20 of Newman et al. to form a cement skin. The Final Rejection at page 4 penultimate line, states, "Galer, which is directed to the same type of cement board as Newman et al., motivates one of ordinary skill in the art to completely embed the reinforcing sheet 10 so that the reinforcing sheet is completely anchored and the desired smooth surface is formed." At page 4, line 16, the Final Rejection states, "Mathieu, which is directed to making the same type of cement board as Newman et al., provides ample suggestion to perform Newman e al.'s process of making a cement board such that the reinforcing sheet 10 is completely embedded in the cement immediately beneath the surface (cement skin") of the panel." The Advisory Action is different from the Final Rejection which instead states, that Mathieu teaches at least partially embedding and specifically suggests completely embedding. See page 4, line 8. In reply, Galer is not directed to the same type of cement board as Newman et al., since Galer teaches, at column 3, lines 3-16, "The reinforcing fibers may be in the form of a network such as a wonwoven mesh or scrim, or a non-woven pervious fabric. ... When a woven mesh or scrim is employed, the mesh size is selected according to the strength desired and the size of the aggregate particles in the slurry. ... Non woven membranes must be sufficiently porous to permit penetration by the slurry." <u>Thus, Galer teaches a mesh individually a scrim individually or a fabric individually, and not a combination with a thin, porous nonwoven web</u>. Such a combination is disclosed by the reference Newman et al. as facing sheet 72 and facing sheet 10, neither of which forms a cement skin by penetration of slurry through a web portion 20 of the combination of a scrim 10 and meltblown web 20. Similarly, Mathieu, at column 16, line 42 states, "...[T]he openings in a mesh, scrim or fabric in this case, are to be sufficiently large to permit passage of the mesh bonding material such as a portland cement slurry, i.e. such that a mesh or scrim or cemented to or embedded in a face or surface." <u>Thus, Mathieu teaches a mesh individually or scrim individually or fabric individually, and not a combination with a thin, porous nonwoven web</u>. Such a combination is disclosed by the reference Newman et al. as facing sheet 72 and facing sheet 10, neither of which forms a

cement skin by penetration of slurry through a web portion 20 of the combination of a scrim 10 and meltblown web 20.

A mesh, scrim or fabric individually, as disclosed by Galer, Mathieu and Canada has mesh openings sufficiently large for penetration by cementitious material, but nothing is disclosed to promote such penetration through and form a cement skin. Canada discloses a fabric that is only partially penetrated by cementitious material, such that the cementitious material does not penetrate through and form a cement skin. No combination of mesh and thin, porous nonwoven web is disclosed by Galer, Mathieu and Canada. Thus they can not teach cementitious material penetrating through a combination of a mesh and a thin, porous nonwoven web, and forming a cement skin. Schupack discloses, "[l]ayers 22 and 24 ...formed from a hydraulic cement matrix reinforced with non-woven spatial fabric elements 23 and 25... The particular embodiment illustrated in Fig 5, has two <u>outer reinforcing layers enclosing a mortar or concrete core</u>." (Underline emphasis added) See column 8, lines 8-27. Fig. 5 shows that the cement matrix does not penetrate through and form a cement skin. In Newman et al., Fig. 6 shows facing sheet 78 that has no cement skin, and no cement skin is described. Slurry 91 is applied on a top surface of facing sheet 10 to provide a cement skin on the top surface. Slurries 76 and 93 are disclosed as penetrating scrim 15 but are not disclosed as penetrating meltblown web 20. Moreover, Newman et al. discloses the force of gravity causes slurries 76 and 93 to fall away from the facing sheet 10, and thereby, slurries 76 and 93 can not form a cement skin on the top surface of the facing sheet 10.

The Final Rejection at page 4, line 17 states, "Mathieu, which is directed to making the same type of cement board of Newman et al, provides ample suggestion to perform Newman et al.'s process of making a cement board such that the reinforcing facing sheet 10 is completely imbedded in the cement immediately beneath the surface ("cement skin") of the cement panel. Mathieu discloses a mesh, scrim or fabric, but does not disclose a combination of a mesh with a thin, porous nonwoven web. The Advisory Action states, "With respect to the desirability of embedment, it is emphasized that Mathieu discloses completely embedding a fabric in

cementitious slurry (col. 6 lines 59-61, col. 17 lines 55-65)." In response, Mathieu discloses a mesh, scrim or fabric individually, at column 16, lines 43-47, "[T]he openings in a mesh, scrim or other fabric in this case are to be sufficiently large to permit passage of the mesh bonding material such as a portland cement slurry, i.e. such that a mesh or scrim is cemented or imbedded in a face or surface." (Underline emphasis added) The web has to have sufficiently large openings, as in Mathieu, but no disclosure is present to promote penetration of such openings. Mathieu is silent on how to promote penetration through a combination of a mesh and a thin, porous nonwoven web and form a cement skin. Such silence is in contrast to Applicant's recited claims. Applicant's claim 17 provides a method of penetrating a mesh and promoting penetration of cementitious material through a thin, porous nonwoven web and form a cement skin. Mathieu combined with Newman et al. and the other cited references is silent for teaching, suggesting, motivating or explaining a further method of promoting penetration of a cementitious material through a mesh 15 and/or a web 20 as taught by Newman et al. to form a cementitious skin.

Berke et al. does not disclose a mesh, scrim, fabric or a thin, porous nonwoven web. Berke et al. teaches a mixture of cement and individual fibers treated with a wetting agent to disperse the individual fibers in the mixture. Canada teaches a fabric treated with a polymer (wetting agent), and yet cementitious material penetrates only partially through the fabric, and does not penetrate through the fabric to form a cement skin, despite the fabric being treated with the wetting agent.

The Final Rejection combines Berke et al. with the other cited references. A combination of Berke et al. with the other cited references does not pertain to Applicant's method, "promoting penetration through the thin, porous nonwoven web by the portion of the layer of hydraulic cementitious material to form the cement skin adjacent to the outer face." Berke et al. discloses at column 2, lines 15-18, a method of "mixing ...to obtain a concrete mortar, or paste mix in which the individual fibers are homogeneously distributed; and casting the mix into a configuration." Berke et al. does not pertain to a mesh, scrim, fabric or thin porous nonwoven

web. Applicant's method involving a web is different from homogenous distribution of individual fibers according to Berke et al. Applicant's method pertains to promoting penetration of a cementitious material through a thin, porous nonwoven web to form a cement skin.

Canada teaches a fabric individually. Such a fabric of Canada is only partially penetrated by cementitious material, and the cementitious material does not form a cement skin. More discussion of Canada appears below. The Advisory Action states that Applicant's argument is not persuasive (pertaining to Berke et al. in combination with the other cited references). The Advisory Action states, "One of ordinary skill in the art is appraised by Canada that even when partial embedment of fibers of a fabric in cementitious material is desired, <u>a wetting agent</u> should be applied to the fabric (pages 13-14). Canada teaches that use of a 'wetting agent' on fabric permits the composition to penetrate the fabric and results in a stronger bond." Underline emphasis added. Further, the Advisory Action states, "Applicant argues that a cementitious composition does not penetrate through Canada's porous fabric. ...Contrary to applicant's arguments, Canada's cementitious material penetrates the fabric." In response, it appears that the Final Rejection is pointing out that Canada teaches penetration by cementitious material, while Applicant's remarks refer to penetration through, which is a subtle distinction. Accordingly, Applicant supplements its previous remarks by pointing out, in Canada a cementitious composition does not penetrate through a porous fabric 14 <u>and form a cementitious skin</u>, even when the porous fabric 14 is treated with a polymer (<u>wetting agent</u>) such as the polymer of Canada or the wetting agent of Berke. Further discussion now follows.

Page 5, lines 1-9 of Canada states, "The process described herein is capable of producing concrete products, including panels ... with reinforcing layers on their exterior surfaces. <u>Because the reinforcing layers are substantially exposed</u> ...decorative coatings such as paint can generally be applied... with relative ease." Further, at Page 5, lines 10-24, "According to one aspect of the present invention, a process for the manufacture of concrete products includes arranging a surface reinforcing layer of porous material... selected from the group consisting of fabric and

moisture-resistant paper, ... and having an inner surface coated with a polymer so the applied polymer penetrates the layer of material. A ...cementitious composition is cast over the layer of material....This composition has a consistency that enables it to partially, yet substantially penetrate the layer of material." Underline emphasis is added to indicate that the cementitious composition partially penetrates, but does not penetrate through the layer of material and form a cementitious skin.

Further, Canada discloses at Page 13, lines 1-3, "The next step is to coat the inner surface 24 of the fabric or paper layer with a suitable polymer 26 that should penetrate the layer." Canada states, at page 14, lines 10-21, "Figure 5 illustrates the casting of a layer 32 of a cementitious composition. ... This casting step should take place before the polymer coating 26 has dried so that the polymer can assist in the penetration of the cementitious composition." Canada states at page 9, line 29- page 10, line , "In order to provide a secure and durable bond... the cementitious composition, the porous fabric, and the polymer material are selected and applied so as to permit and enable the cementitious composition partially and substantially to penetrate each of the surface-reinforcing layer in the manner illustrated in Figure 90." Underline emphasis is added to indicate that the cementitious composition partially penetrates, but does not penetrate through the layer of material and form a cementitious skin. Canada states, at page 11, lines 14-16, "Preferably the fabric also provides a suitable finished surface to the final product in order to enable a decorative or finish coat, such as paint, to be applied to it." Canada discloses At page 17, lines 15-24,, "Preferably the panel 10 is again coated with polymer 52 to form surface coatings 53 and 54. .... The additional coatings 53 and 54 on the exposed surfaces of the layers 14 and 16 [fabric layers 14 and 16]... enables a better bond between the fabric layer and a final decorative or protective coating such as paint." Underline emphasis added. Thus, Canada discusses that the exposed surfaces of the fabric layer of Canada are to be painted. they can not be painted if a cement skin is present. Thus, Canada excludes an interpretation that the fabric layer is constructed in a manner that cementitious material has penetrated through the fabric layer and forms a cement skin, even when the fabric layer is treated with a polymer of Canada or

the wetting agent of Berke et al. Canada can not teach a method of promoting penetration of a cementitious material through a thin, porous nonwoven web to form a cement skin, when the Canada method expressly states that the layers 14 and 16 [fabric layers] have "exposed surfaces" for additional coatings 53 and 54 the enable a better bond between the fabric layers and paint.

The Advisory Action states, "Also, note Canada's disclosure that '[o]ne significant factor affecting penetration is the consistency of the cementitious composition. Preferably the consistency is selected so as to permit the cementitious composition to penetrate at least one half of the thickness of the fabric layer.' Thereby, the Advisory Action indicates wherein Canada teaches a cementitious composition that penetrates at least one half of the thickness of the fabric, but does not indicate where Canada would teach penetration <u>through</u> the fabric layer and forming a cementitious skin. Canada teaches, "The additional coatings 53 and 54 on the <u>exposed surfaces of the layers 14 and 16</u> [fabric layers]... enables a better bond between the fabric layer and a final decorative or protective coating such as paint." Underline emphasis added. Thus, Canada discusses that the exposed surfaces of the fabric layer of Canada are to be painted, and as such, excludes an interpretation that the fabric layer is constructed in a manner that cementitious material has penetrated through the fabric layer and forms a cement skin. Canada discloses, at page 8, "Figure 9 is a sectional detail showing the manner in which the cementitious composition penetrates the porous material." Page 9, lines 1-3 of Canada states, "<u>The central core 12 is covered on both its major surfaces</u> with surface-reinforcing layers 14 and 16 of a porous fabric or moisture-resistant paper integrally bonded to the central core layer on opposite sides thereof." (Underline emphasis added) Thereby, Canada discloses that cementitious material, core 12, is <u>covered on both its major surfaces</u> by porous fabric layers 14 and 16. Further, Fig. 9 expressly discloses an absence of a cementitious skin on fabric layers 14 and 16. A cement skin is not present. Moreover, Canada does not teach a combination of a mesh and a thin, porous nonwoven web. If a wetting agent treated fabric of Canada is not penetrated through by cementitious material and forming a cement skin, then Canada can not teach a combination of a mesh and a thin, porous nonwoven web that is penetrated through by cementitious material and forming a

cement skin, even when combined with the wetting agent of Berke et al. Thereby, Canada's disclosure is not contrary to Applicant's arguments that Canada does not teach penetration through a fabric and forming a cementitious skin.

The Final Rejection cites Canada (CA 2006149), wherein Canada teaches that a cementitious composition does not penetrate through a porous fabric 14 (page 12, line 16) and form a cement skin, even when the porous fabric 14 is treated with a polymer (the "wetting agent" according to the Advisory Action) to reduce viscosity of the cementitious composition. Thus, the porous fabric of Canada is constructed in a manner that does not allow penetration through the porous fabric, even when the porous fabric is treated with a polymer to reduce viscosity of the cementitious composition. Canada can not combine with the other references to teach a method of promoting penetration of a cementitious material through a thin, porous nonwoven web of a combination of the web and a mesh, to form a cement skin, when the Canada method expressly does not allow penetration through a porous fabric even when treated by a polymer (the "wetting agent").

Further the Advisory Action states, "When Canada and Berke et al. are viewed as a whole, one of ordinary skill would have readily understood that a wetting agent can and should be applied to fibers to facilitate their embedment in cementitious material." Further, it is noted that Canada and Berke can not be combined to teach as inherent that penetration through the Canada fabric and forming a cementitious skin would occur as a possibility or probability. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. See MPEP 2112 IV.

The Advisory Action cites KSR International Co. v. Teleflex Inc. et al. for the principle that any need or problem known in the field of endeavor at the time of the invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. However, it is noted that Berke et al. does not address the need or problem of promoting the formation of a cementitious skin. It is noted that Canada does not address the need or problem of promoting penetration through and forming a cementitious skin.

Canada teaches that despite the addition of polymer (the "wetting agent") such wetting agent does not allow penetration of cementitious material through a porous fabric. Berke et al.'s wetting agent is disclosed to be no different from Canada's wetting agent. The only difference between Berke et al. and Canada resides in individual fibers of Berke et al. and a porous fabric of Canada, which can not combine to overcome Canada's teachings that a wetting agent does not allow penetration of cementitious material through a porous fabric. Thus, Canada when combined with a "wetting agent," either the polymer of Canada or the wetting agent of Berke et al., would still teach that a cementitious composition does not penetrate through a porous fabric 14 (page 12, line 16 of Canada) and does not form a cement skin, even when the porous fabric 14 is treated with a polymer or wetting agent to reduce viscosity of the cementitious composition. Moreover, Canada does not teach a combination of a mesh and a thin, porous nonwoven web. Thus, Canada and Berke et al. do not address the need or problem of promoting the formation of a cementitious skin by promoting penetration through a thin porous nonwoven web, the web being combined with a mesh, and thereby, the principle established by KSR International Co. v. Teleflex Inc. et al. does not apply.

The method of Claim 29 recites, prior to depositing the reinforcement fabric and the layer of hydraulic cementitious material one on the other, applying a slurry having a cement powder and one or more of, hydrophilic additives, wetting agents, foaming agents and foam boosters to either or both of the open mesh and the thin, porous nonwoven web; and drying the slurry. The Advisory Action states that the slurry of Newman et al., Mathieu and Galer discloses a slurry comprising cement powder and water. However, none of Newman et al., Mathieu and Galer teach drying such a slurry prior to depositing a reinforcement fabric and a layer of hydraulic cementitious material one on the other. It is clear that in Applicant's method a slurry is dried, and a layer of hydraulic cementitious material is separate from the dried slurry. None of Newman et al., Mathieu and Galer teach hydraulic cementitious material separate from a slurry that is dried prior to applying the hydraulic cementitious material.

Applicant's dependent claims are separately patentable for the reasons discussed above and for the reasons previously filed in Applicant's response filed February 14, 2006 by certificate of mailing and incorporated herein by reference.

Rejection of Claims 25 and 37 Pursuant to 35 U.S.C. § 103(a) Over Newman et al. (US 6,054,205) in view of Mathieu (US 6,187,409) Galer (US 4,450,022) Canada (CA 2006149) and Berke et al. (US 5,753,368) and further in view of Cooper (US 6,254,817)

Claim 25 is separately patentable over the combination of cited references for the reasons discussed above, and is separately patentable over the combination of Cooper with the other cited references for the added reasons directed to Cooper's added teachings, as previously filed in Applicant's response filed February 14, 2006 by certificate of mailing and incorporated herein by reference.

Rejection of claims 24-26 Pursuant to 35 U.S.C. § 103(a) Over Newman et al. (US 6,054,205) in view of Mathieu (US 6,187,409) Galer (US 4,450,022) Canada (CA 2006149) and Berke et al. (US 5,753,368) and further in view of Schupack (US 4617219)

Claims 24-26 are separately patentable over the combination of cited references for the reasons discussed above, and are separately patentable over the combination of Schupack with the other cited references for the added reasons directed to Schupack's added teachings, as previously filed in Applicant's response filed February 14, 2006 by certificate of mailing and incorporated herein by reference.

A mesh, scrim or fabric individually, as disclosed by Galer, Mathieu and Canada must have mesh openings sufficiently large for penetration by cementitious material. Canada discloses a fabric that is only partially penetrated by cementitious material, such that the cementitious material does not penetrate through and form a cement skin. No combination of mesh and thin, porous nonwoven web is disclosed by Galer, Mathieu and Canada. Thus they can not teach cementitious material penetrating through a combination of a mesh and a thin, porous nonwoven web, and forming a cement skin. A mesh and melt blown polymer web combination is disclosed

by Newman et al. and Schupack, but the cementitious material does not penetrate through the melt blown polymer web portion of the mesh and melt blown polymer web combination, and form a cement skin.

In view of the Amendments to the claims, and the Remarks supporting patentability, allowance is requested.

Respectfully submitted,

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